

**MOLD REMEDIATION PROTOCOL**

**618 VILLA LINDA  
SAN ANTONIO, TEXAS**

**PREPARED FOR:**

**SAN ANTONIO HOUSING AUTHORITY (SAHA)  
818 S FLORES  
SAN ANTONIO, TEXAS 78204**

**PROJECT CONSULTANT**

**ASTEX ENVIRONMENTAL SERVICES  
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TEXAS DSHS LICENSE #MAC-0509  
EXPIRATION APRIL 25, 2008**

**DATE OF ISSUE  
March 24, 2008**

**PART 1 - GENERAL**

The remediation activities shall comply with this Mold Remediation Protocol, The Texas Department of State Health Service's Mold Assessment and Remediation Rules and, where applicable, regulations of the US Environmental Protection Agency (EPA), the US Occupational Safety and Health Administration (OSHA), and any other applicable state or local regulations. Whenever there is a conflict or overlap among or between the above references the most stringent provisions shall apply.

The remediation Contractor is solely responsible for protection of health, safety and the environment at the job site. The remediation Contractor is solely responsible for all required training and licensure related to any work covered by this Mold Remediation Protocol.

**1.01 SUMMARY OF AFFECTED AREAS REQUIRING REMEDIATION**

This project consists of the repair of a broken bedroom window and the cleaning and of certain building materials and systems and the sanitization of mold contamination on certain surfaces and building components in the residence located at 618 Villa Linda, San Antonio, Texas. Specific details for the construction of containments and removal activities will be located in PART 3 – EXECUTION. The remediation Protocol covers the specific activities to be conducted within the school and each location will be discussed separately.

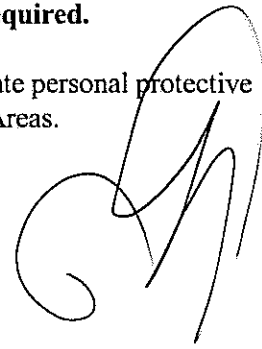
The following areas are specifically addressed within this scope of work:

- A. All surfaces (walls, window units, door units, ceilings, counters, and HVAC system) within the Master Bedroom, hallway and return air closet should be HEPA vacuumed and wiped down with a sanitizing solution.
- C. At least two (2) air scrubbers should be installed during the cleaning process and be allowed to remain for a minimum of 48 hours prior to Clearance sampling taking place.

**1.02 SCOPE OF WORK**

Provide a copy of the state mandated Mold Remediation Contractor's Work Plan based on this Scope of Work and Protocol to Astex Environmental at least 12 hours before beginning work.

- A. Delineation of Containment(s)
  - 1. The following areas shall be placed under limited containment: the hallway, Master Bedroom and return air closet.
  - 2. Designated onsite Clean Storage Area(s): the remaining portion of the residence and/or the garage. The residence is vacant and unoccupied.
- B. Personal Protective Equipment (PPE) Requirements
  - 1. **For areas of limited containment the use of gloves, disposable clothing, headgear, foot coverings, and half face respirator with HEPA filter are required.**
  - 2. The Remediation Contractor shall insure that OSHA appropriate personal protective equipment (PPE) is worn while remediating all Containment Areas.



3. Refer to Section 2.01 for further PPE guidance.
  4. Contractor assumes all responsibility for PPE compliance.
- C. Specific setup procedure (follow in sequence)
1. HEPA vacuum clean the walls, ceilings, carpeting, HVAC closet, supply registers and building materials within the designated rooms
  2. Isolate and contain those designated areas under Limited Containments as per Sections 2.03 ENGINEERING CONTROLS and 3.01 PROCEDURES-MINIMAL CONTAINMENT.
  3. Place ample dehumidification equipment within the containment area and clean storage areas to maintain relative humidity at 50% (+- 5%) during the remediation process.
  4. Isolate all HVAC diffusers throughout the affected areas.
  5. HEPA vacuum flooring (carpet and/or hard) part to the installation of the engineering control.
  6. Isolate all flooring (carpet and/or hard) with one layer of 6-millimeter polyethylene sheeting and seal with duct tape.
  7. Conduct a joint visual inspection with Astex Environmental.

### 1.03 SPECIAL CONDITIONS

The following special conditions shall apply to this project.

- A. The Contractor shall coordinate a post-material cleaning inspection and, finally, a limited post-remediation sampling event. The Remediation Contractor shall not apply long-term anti-microbial compounds (e.g. quaternary ammonia coatings, etc.) until the post-remediation evaluation by the Project Consultant has been successfully completed and then only in a manner consistent with the Texas Department of State Health services rules however for this project anti-microbial coatings are not necessary nor authorized.
- B. Clearance criteria: clearance air samples shall have less than 75% in comparison to outside samples' mold spore counts with no significant genera variation with no more than 1 total spore count of *Stachbotrys* being reported. Surface samples shall identify no more than 10 spores per square inch and not to include water intrusion types of fungal spores.
- D. The Remediation Contractor shall re-clean at his expense if the post remediation samples fail or if the final visual inspection fails. This process of re-cleaning shall continue at the Remediation Contractor's expense until a successful post remediation is achieved. ***THIS SECTION WILL NOT BE APPLICABLE IF THERE ARE SPECIAL OR UNUSUAL CONTAMINATION CONDITIONS DISCOVERED DURING THE REMEDIATION ACTIVITIES AND ASTEX ENVIRONMENTAL IS CONTACTED AND AGREES IN WRITING THAT THIS WOULD SUBSTANTIALLY CHANGE THE SCOPE OF WORK AND AFFECT POSSIBLE POST REMEDIATION EVALUATION.***

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## **PART 2 - PRODUCTS**

### **2.01 PERSONAL PROTECTION EQUIPMENT (PPE)**

- A. Minimum Protection – half face HEPA filtered respirators, disposable suits, eye protection, gloves (e.g. polynitrile)

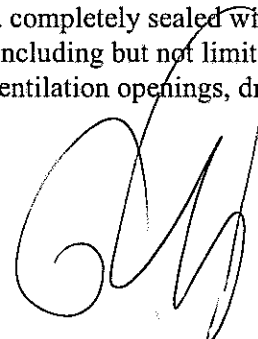
### **2.02 MATERIALS (as applicable)**

- A. Stiff brooms, hand brushes, scrapers, toothbrushes, rough edge sponges and cleaning cloths shall be utilized during sanitization procedures. All equipment shall be new and clean and disposed of as waste at the end of this project.
- B. Polyethylene sheeting of 4 or 6 mil thickness that is clear, opaque or black shades and moisture resistant duct tape and spray on glue capable of continuously sealing polyethylene through project's remediation duration.
- C. PVC or wood supporting frames shall be utilized to ensure that the containments remain intact during the entire remediation and post-remediation procedures.
- D. Polyethylene bags of 6-mil thickness such as those used for asbestos-containing waste.
- E. Airless sprayers to be used for dust control and application of sanitization solution (as directed by manufacturer's label instructions as per the Texas Department of State Health Services Mold Remediation Rules).
- F. A wet-vacuum cleaner and a HEPA-filtered vacuum cleaner. All areas should be cleaned and sanitized and new filters installed prior to beginning the project. All filters shall be disposed of as contaminated waste material at the end of this project.
- G. Ground Fault Circuit Interrupters (GFCI) to be used on all electrical equipment within the containment.

### **2.03 ENGINEERING CONTROLS (GENERAL INFORMATION)**

The following descriptions for the construction of the containment may not be applicable to all remediation projects; however, the Remediation Contractor should refer to this section if any of the following details are specified.

- A. HVAC Systems – All HVAC equipment in or passing through any containment area shall be shut down, and preventative measures taken to prevent accidental start-ups. All intake and exhaust openings shall be sealed with at least one (1) layer of 6-mil polyethylene sheeting. The seals shall be installed in such a manner as to guarantee that the seals shall remain in place for the duration of the project.
- B. Critical Barriers – Containment areas within which remediation activities are to be conducted shall be separated from adjacent areas by impermeable barriers with a minimum of one (1) layer of 6-mil polyethylene sheeting attached securely in place and completely sealed with tape. All openings between containment area(s) and adjacent area(s), including but not limited to windows, doorways, elevator openings, corridor entrances, ventilation openings, drains, ducts,



grills, grates, diffusers, skylights, etc., shall be sealed. All cabinets, shelving etc, that have cracks, holes or other openings shall also be sealed.

- C. Movable Objects – All movable objects shall be cleaned and removed from the containment area(s), as specified in the Scope of Work.
- D. Containment Area Ventilation – Air Filtration Devices with HEPA filtration and in a sufficient number to provide a negative pressure between the containment and outside areas shall be operated continuously from the time containment is established through the time acceptable final post-remediation results are obtained. All units should be clean and sanitized with new filters installed prior to the beginning of the project. All units utilized to provide clean filtered air into the containment area shall be vented to the exterior of the entire structure whenever possible. The Remediation Contractor shall carefully coordinate with the Assessment Consultant and Property Owner prior to the establishment of the Air Filtration Device's exhaust into a particular area. Air exhaust locations will be secured from criminal entry by using burglar bars or other satisfactory method during the remediation process and protected against water intrusion during rainfall events. Provisions for make-up air should be made; dedicate a portion of a wall critical barrier for fresh make-up air. Ensure that each make-up air opening is adequately filtered. All filters shall be disposed of as contaminated waste material at the end of the project.
- E. De-Humidifiers – Air dehumidifiers should be utilized as required in the Scope of Work and in a manner consistent with maintaining the relative humidity to approximately 50% (+- 5%) during the remediation/sanitization activities until the project's Post Remediation Assessment Passed Clearance Report has been issued.

### **PART 3 – EXECUTION**

#### **3.01 PROCEDURES – (AS REQUIRED IN THE SCOPE OF WORK)**

When delineating containments, the Remediation Contractor should plan for the need to expand the containment area if additional contamination is identified during the remediation activities. Any decisions regarding the expansion of the containment(s) shall be done after consultation with the project's Assessment Consultant. Under no circumstances shall the Contractor modify the containment to a smaller size than it was initially established.

- A. Minimum Containment Procedures (See Section 2.03 for details):
  - 1. Isolate and critical the HVAC system throughout the containment(s) area.
  - 2. Install critical barriers to isolate the containment area(s)
  - 3. All polyethylene sheeting seams should be completely sealed with adequate tape
  - 4. Air Filtration Devices may be required to operate in scrub mode as directed in the Scope of Work.

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### 3.02 SANITIZATION PROCEDURES

The following procedures shall be followed at the completion of the cleaning activities defined in the Scope of Work and are a part of the final clean up. The Assessment Consultant shall be notified upon completion of the cleanup and sanitization for a visual inspection *no less than 48 hours after completion*. The use of anti-microbial coatings or solutions is neither necessary nor approved for this project.

### 3.03 POST REMEDIATION EVALUATION PROCEDURES

Post remediation evaluation for the project shall be accomplished with the collection of samples based on the following protocol. All Minimum Containments shall remain operational and in place until all work areas have successfully passed sample analysis. *The Assessment Consultant shall be notified prior to the remediation area's readiness for visual inspection and post-remediation sampling.*

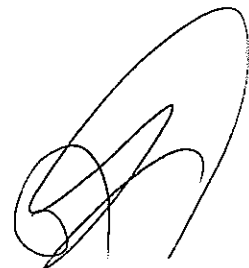
- A. Air samples shall be collected utilizing aerosol cassettes for total particle microscopically screen. These samples shall be collected from within the containment areas, the adjacent areas outside the containment and the exterior as appropriate.
- B. Surface samples shall be randomly collected from within the containment areas and analyzed for mold spores using a microscopic screen. These samples will be collected from the wall cavity.
- C. CLEARANCE CRITERIA: clearance air samples shall have less than 75% in comparison to outside samples' mold counts with no significant genera variation and no *Stachybotrys* spores being identified.

### 3.04 ASSESSMENT CONSULTANT COORDINATION

Coordination between the project's Assessment Consultant and the Remediation Contractor is essential in achieving a complete remediation project and first-time passed clearance post-remediation evaluation. The Remediation Contractor should immediately contact the Assessment Consultant if any of the following circumstances occur.

- A. Additional water damage and/or mold amplification is encountered that may alter the Scope of Work.
- B. Any time there is a concern regarding the containment area construction, extent of the demolition and/or the effectiveness of the sanitization process.

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